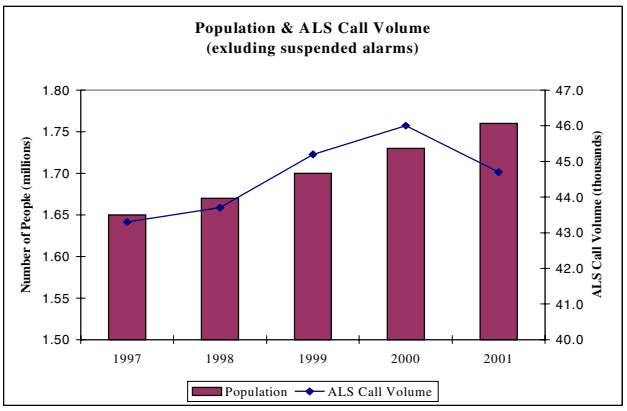
Summary of 2001 EMS Statistics (Seattle and King County)*

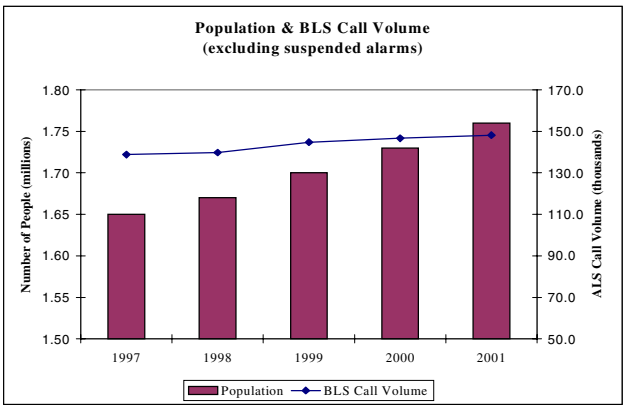
The following statistics are derived from the data collected on the Medical Incident Report Forms (MIRFs) and submitted by EMS agencies to the EMS Division for the year 2001.

General Statistics:

Service Area:	2,134 sq. miles	
Population	**Seattle-King County**	**% Growth (10 Year)**
1980	1,269,898	
1990	1,507,305	18.7%
2000	1,730,504	14.8%
2001	1,758,321	1.62% (1 yr)

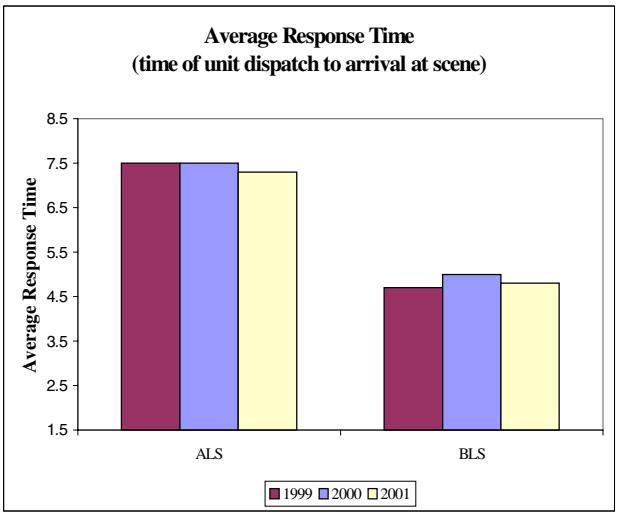
Over the past two decades, population growth in King County has remained well above an average rate of 1% per year. In 2001, the population increased 1.62% from the previous year. The two graphs below depict the population growth relative to both BLS and ALS call volume patterns (please note that the scales for population and call volumes are different). As mentioned in the discussion regarding Strategic Initiative #6: ALS Dispatch Criteria Revisions (page 19), ALS call volumes have started to decline recently and will be monitored carefully.





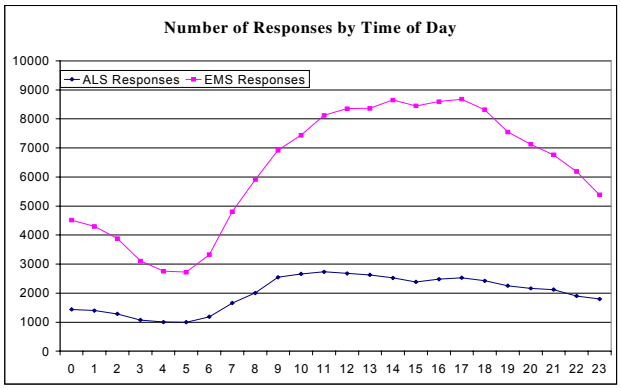
Operations:	**ALS**	**EMS (all calls)**
Number of Responses	57,423	165,255
	ALS	**BLS**
Average Response Time	7.3 minutes / 11.8	4.8 minutes / 6.6 minutes
6 Minutes or less		84.2% / 63.8%
8 Minutes or less	68.7% / 38.6%	
10 Minutes or less	83.7% / 56.2%	
12 Minutes or less	92.3% / 68.4%	
14 Minutes or less	96.1% / 76.3%	
Suspended Alarms	22.1%	4.9%

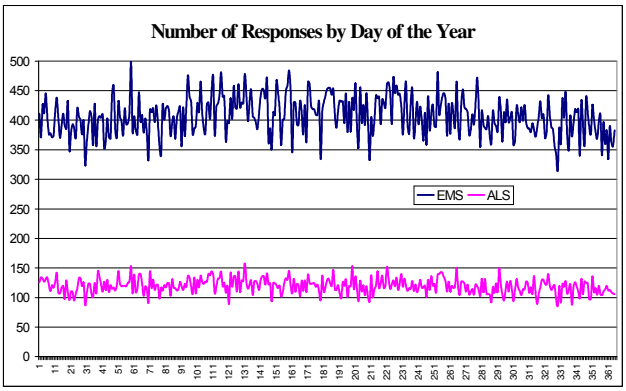
* In some instances, totals differ due to missing values. Response times are defined as follows: the time of unit dispatch to time of arrival at the scene (all of King County) / the time of call arrival at dispatch to the time of arrival at the scene (excluding Seattle).



Despite the continued growth in population and total call volumes in the county, the average unit response times have remained steady. In the case of ALS response times, the average response declined slightly last year as depicted in the graph to the left.

The two graphs located directly below reflect the patterns of ALS and BLS response during the day and throughout the year. Of note, is the wide range of BLS responses per day (~300-500 calls) and over time, in comparison to ALS responses (~100-150 calls) with little variance over time.



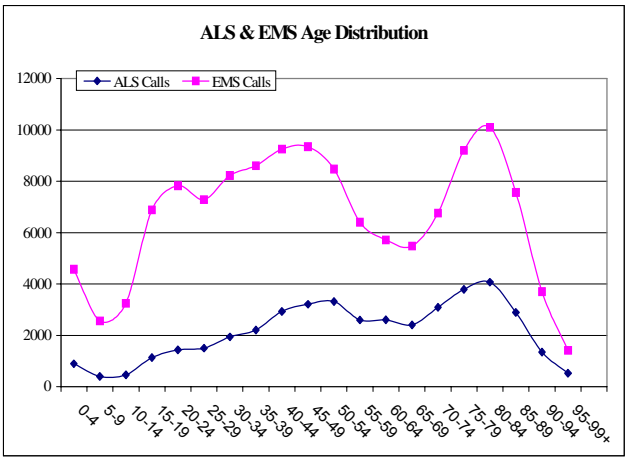


Characteristics of Responses:

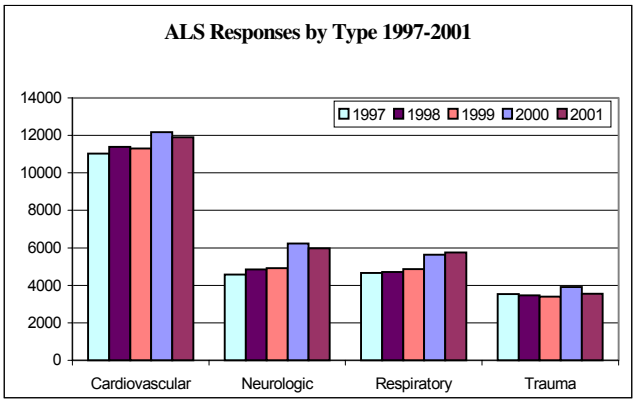
The following information reflects a variety of statistics that characterize the types of both BLS and ALS calls, including a comparison of age groups, types of medical complaints, where incidents take place, and patient transport information.

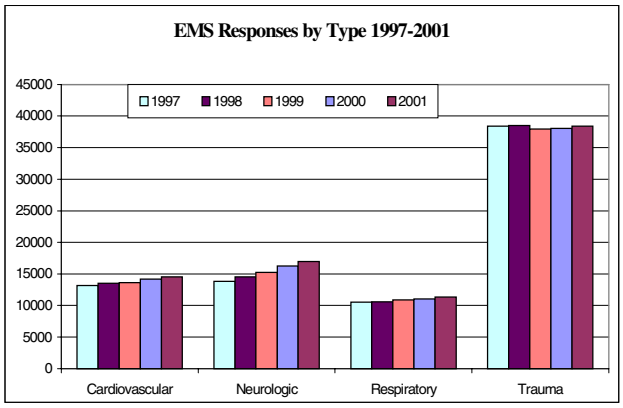
Responses by Age Group:

	ALS	EMS
0-17 yrs	2,367 (5.5%)	14,043 (10.6%)
18-24 yrs	1,954 (4.6%)	11,053 (8.3%)
25-44 yrs	8,581 (20.1%)	33,387 (25.2%)
45-64 yrs	11,731 (27.4%)	29,938 (22.6%)
65+ yrs	18,116 (42.4%)	44,238 (33.3%)
Total	**42,749**	**132,659**



Responses by Type:	**ALS**	**EMS**
Cardiac	11,904 (28.9%)	14,563 (11.8%)
Neurologic	5,969 (14.5%)	16,983 (13.8%)
Respiratory	5,759 (13.9%)	11,326 (9.2%)
Trauma	3,555 (8.6%)	38,398 (31.1%)
Abdominal/GU	2,301 (5.6%)	8,154 (6.6%)
Metabolic / Endocrine	2,458 (6.0%)	3,582 (2.9%)
Other Illness	9,222 (22.4%)	30,476 (24.7%)
Total	**41,168**	**123,486**

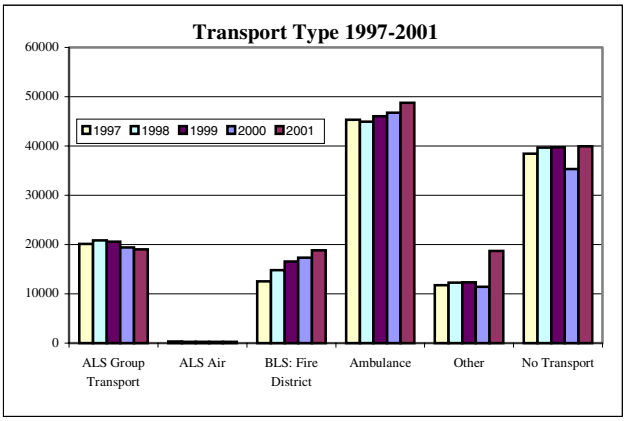


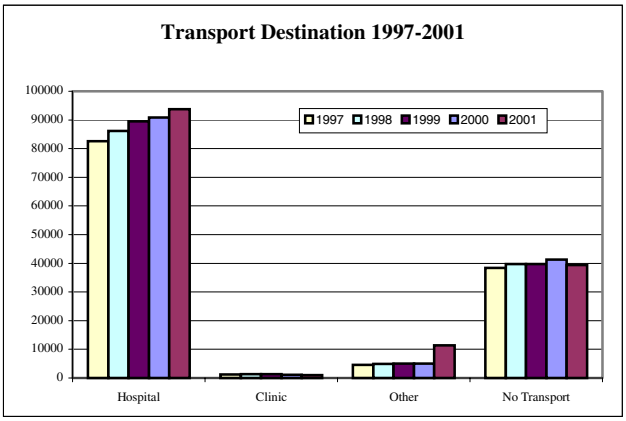


Incident Locations:	**ALS**	**EMS**
Home/Residence	22,751 (61.5%)	70,750 (51.9%)
Nursing Home	2,289 (6.2%)	4,981 (3.8%)
Clinic / MD Office	1,652 (4.5%)	2,574 (2.0%)
Street/Highway	3,303 (8.9%)	23,169 (17.7%)
Other/Unknown Location	6,969 (18.9%)	29,687 (22.6%)
Total	**36,964**	**131,161**

Transport Type:	
ALS Transport	19,056 (13.1%)
ALS Air	289 (0.2%)
BLS - Fire District	18,827 (12.9%)
BLS - Ambulance	48,771 (33.5%)
Other	18,670 (12.8%)
No Transport	39,959 (27.5%)
Total	**145,572**

Transport Destination:	
Hospital	93,700 (64.4%)
Clinic	1,058 (0.7%)
Other	11,406 (7.8%)
No Transport	39,398 (27.1%)
Total	**145,562**





Public Health Highlight: Mental Health Status

Public Health - Seattle & King County supports the review of mental health status as part of a broad approach to understanding the well being of a population. The department recently conducted such a review in King County, including a broad look at the number of 'mental health' days employees claim per year and a survey of the mental health of high school students.

In light of this interest, the EMS Division examined the subset of callers to 911 with primarily mental health complaints for the year 2001. The following information characterizes the results of the review.

Conclusions: 1) EMS responds to mental health needs and concerns in the community. 2) Acute mental health needs account for a modest but measurable proportion of EMS calls. This proportion appears to be *fairly* stable over the last 3 years. 3) Although few of these instances are life threatening (based on ALS response/ transport), the majority still required continued medical evaluation and care at a clinic or hospital.

Table 1. Proportion of EMS calls for primary mental health needs

	1999	2000	2001
Total calls	144,592	148,959	151,249
Mental health calls	4,236 (2.9)	4,341 (2.9)	5,238 (3.5)

Table 2. Patient and EMS characteristics for primary mental health needs

Characteristic	2001 (n =5238)
Female, % (n)	63.1 (3303)
Age (years), avg. (SD)	41 (19)
ALS response, % (n)	21.2 (1112)
EMS primary diagnosis, % (n)	
Anxiety	53.0 (2774)
Depression	12.7 (670)
Hallucination	8.5 (447)
Agitation	5.3 (275)
Other	20.5 (1072)
Transport, % (n)	
Private/None/Other	44.0 (2305)
BLS	51.1 (2674)
ALS	4.9 (259)
Destination, % (n)	
Home	35.6 (1866)
Hospital	60.6 (3173)
Clinic/other	3.8 (199)

Cardiac Arrest Statistics:

The Cardiac Arrest Surveillance System (CASS) located in the EMS Division has evaluated cardiac arrest statistics for almost thirty years (see page 34 for more details about the Center of Evaluation of EMS). Similar data is collected within the City of Seattle. The following information depicts the combined cardiac arrest survival rates.

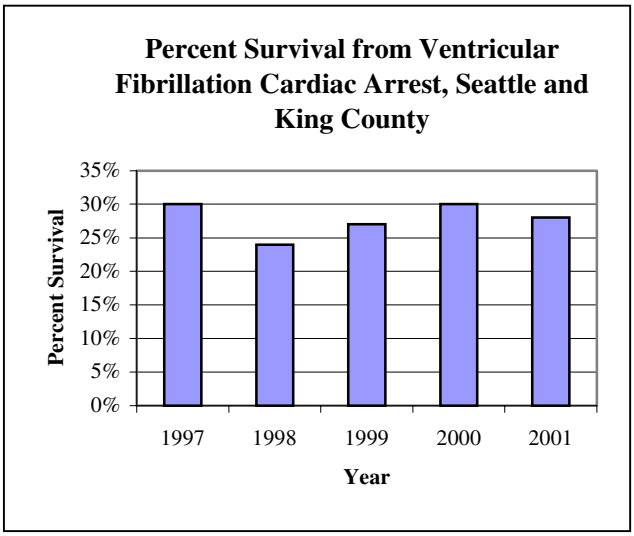
CPR Initiated by (for all calls):

CPR Initiated by Bystander	568/1182 (48%)

Cardiac Survival Rate: *

Year	Rate
2001	97/350 (28%)
1997-2001	515/1856 (28%)

* Definition: discharged from hospital alive / treated patients in cardiac arrest on arrival of EMS, with a rhythm of ventricular fibrillation.



CPR Highlight: Cardiopulmonary Arrest from Drug Overdose

Death from "drug overdose," also termed acute drug poisoning, is a growing public health problem, especially among teenagers and young adults. Although EMS provides care in many situations where prescribed or illicit drugs may be involved, the role of EMS in critical drug poisonings, defined as overdoses that result in cardiopulmonary arrest, is unknown.

During the year 2000, 234 persons died of drug overdose and 11 persons who experienced cardiopulmonary arrest from drug overdose were successfully resuscitated in Seattle and King County. EMS personnel responded to approximately 80% (184/245) of these overdose victims, and attempted resuscitation in 35% (85/245).

Of the 85 persons for whom EMS attempted resuscitation, opiates comprised the most common drug class (approximately 60%), though in over half of the cases also involved multiple drug classes.

Based on the results from this evaluation, the EMS system in Seattle and King County is involved in the large majority of critical drug overdoses and are able to successfully resuscitate a small but measurable number of overdose victims who have suffered a cardiopulmonary arrest.

ALS/BLS Highlight: Procedures Performed by EMS Personnel

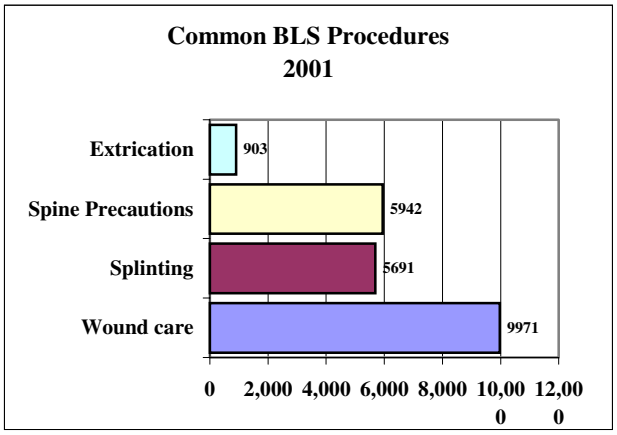
King County is served by a two-tiered EMS response system. **Emergency Medical Technician (EMT)** - trained fire fighters provide the first tier of response referred to as Basic Life Support (BLS). EMTs receive approximately 120 hours of classroom and practical skills time with an additional 10 hours of hospital observation. Areas of instruction include the initial triaging and stabilization of patients, management of non-critical injuries, and cardiopulmonary resuscitation (CPR). EMTs respond to most calls to 911 with the exception of those referred to the Telephone Nurse Line.

Paramedics staff the Advanced Life Support (ALS) units and provide the second tier of response in cases where the medical condition is more urgent or complex. Paramedics receive over 2500 hours of intensive hospital-based training in areas of advanced airway management, intravenous drug therapy, and management of multi-system trauma care. Paramedics only respond to 911 calls that are life-threatening emergencies.

EMTs and paramedics provide distinct yet complementary care determined by their training and expertise. This is reflected in the different types of responses they encounter (see Characteristic of Responses on page 39) and is illustrated by the common procedures performed depicted in the graphs to the right. One common scenario that illustrates the strengths of the two-tier system is the serious motor vehicle crash where the BLS provider works to safely secure the patient and address injuries while ALS monitors and treats complications of the cardiopulmonary system. The dual approach enables quick, efficient, and effective care.

Basic Life Support (BLS) provided by EMTs

BLS providers are responsible for the initial management of patients. In 2001, EMTs provided wound care and splinting to 9,971 and 5,691 patients, respectively. Spine precautions with backboard and c-collars were provided to 5,942 patients. EMTs performed 903 extrications.



Advanced Life Support (ALS) provided by Paramedics

ALS providers are responsible for advanced, and sometimes invasive, management of patient care, including cardiopulmonary conditions. In 2001, paramedics monitored 26,779 ECGs, established 20,091 IV lines, and intubated 2,548 patients.